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## (54) SILICON-BASED BLOCK COPOLYMER AND MEMBRANE MADE THEREOF

### (57)Abstract:

**PURPOSE:** To obtain a new copolymer giving a separation membrane having high gas transmission coefficient by reacting two kinds of siloxanediols with a diisocyanate and a carbonate diol.

**CONSTITUTION:** The objective block copolymer is produced by using (A) a siloxanediol of formula I (R1 and R2 are bivalent hydrocarbon group; R3 is methyl or phenyl; (1) is ≥8), (B) a siloxanediol of formula II ((m) is ≥8), (C) a diisocyanate of formula III (R4 is aliphatic group, alicyclic group or aromatic group) and (D) a carbonate diol of formula IV (R5 is aliphatic group; (n) is ≥3) as starting raw materials, dissolving the component C in an organic solvent, reacting with the component A and the component B in nitrogen gas stream and finally adding and reacting the component D to the above reaction product.

